FIG. 1

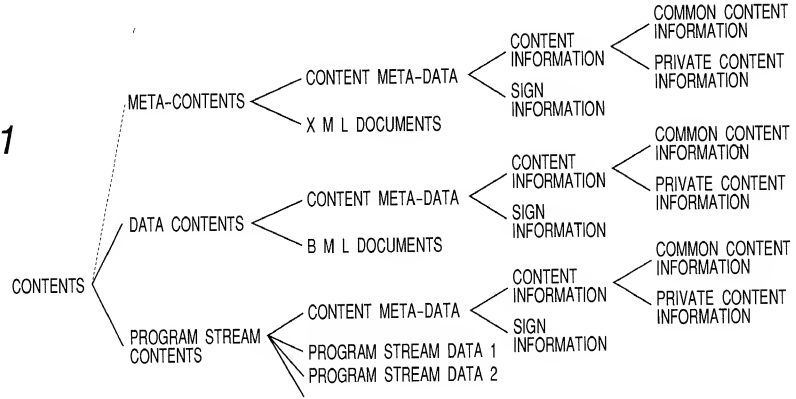

FIG. 2

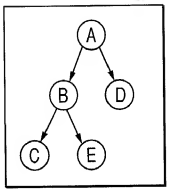

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FIG. 3

```
<!ELEMENT Service CompInfo public_key, (storage_id_info)*,(element_service)+,
      (storage_info)*>
<!ELEMENT public_key, EMPTY>
<!ELEMENT element_service (content_group)+, (storage_id_info)*>
<!ELEMENT content_group (storage_id_info)*>
<!ELEMENT storage_id_info EMPTY>
<!ELEMENT storage_info (ird_level_list)*>
<!ELEMENT ird_level_list (storage_id_list)*>
<!ATTLIST ServiceCompInfo
info_major_version              PCDATA   #REQUIRED
info_minor_version              PCDATA   #REQUIRED
information_provider_id         ID_NUM   #REQUIRED
information_provider_name       CDATA    #REQUIRED
information_provider_char       CDATA    #REQUIRED
work_area_size                  PCDATA   #REQUIRED
first_bml                       ID_NUM   #REQUIRED
>
<!ATTLIST public_key
version                         PCDATA   #REQUIRED
key                             PCDATA   #REQUIRED
limit                           DATE     #REQUIRED
>
<!ATTLIST element_service
element_service_id              ID_NUM   #REQUIRED
element_service_name            CDATA    #IMPLIED
element_service_char            CDATA    #IMPLIED
first_bml                       ID_NUM   #IMPLIED
schedule_info                   (ON/OFF) OFF
>
<!ATTLIST content_group
content_group_id                ID_NUM   #REQUIRED
content_group_name              CDATA    #REQUIRED
content_group _char             CDATA    #REQUIRED
first_bml                       ID_NUM   #IMPLIED
>
<!ATTLIST storage_id_info
storage_id              ID-NUM      #REQUIRED
>
<!ATTLIST ird_level_list
ird_level                       PCDATA  #REQUIRED
>
<!ATTLIST storage_id_list
storage_id                      ID_NUM      #REQUIRED
storage_policy                  (0/1/2/3/4) 0
exclusive_storage _av           PCDATA  #REQUIRED
exclusive_storage _data         PCDATA  #REQUIRED
>
```

FIG. 4

```
<!ELEMENT ScheduleInfo (content_info)*, (next_schedule)*>
<!ELEMENT content_info (schedule)+, (filtering_pattern)+>
<!ELEMENT schedule_list (schedule)+>
<!ELEMENT next_schedule (schedule)+>
<!ATTLIST ScheduleInfo
info_major_version          PCDATA   #REQUIRED
info_minor_version          PCDATA   #REQUIRED
information_provider_id     ID_NUM   #REQUIRED
element_service_id          ID_NUM   #REQUIRED
>
<!ATTLIST content_info
element_content_id          ID_NUM   #REQUIRED
content_major_version       PCDATA   #REQUIRED
content_minor_version       PCDATA   #REQUIRED
data_type                   (STREAM/FILE) #IMPLIED
content_size                CDATA    #IMPLIED
>
<!ATTLIST schedule_list
transport_stream_id         ID_NUM   #REQUIRED
original_network_id         ID_NUM   #REQUIRED
service_id                  ID_NUM   #REQUIRED
>
<!ATTLIST schedule
start_time                  DATE     #REQUIRED
duration                    PCDATA   #REQUIRED
>
<!ATTLIST filtering_pattern
layer                       (1/2)    #REQUIRED
def_version                 PCDATA   #REQUIRED
fieldID                     ID_NUM   #REQUIRED
info_version                PCDATA   #REQUIRED
pattern                     CDATA    #REQUIRED
>
<!ATTLIST next_schedule
transport_stream_id         ID_NUM   #REQUIRED
original_network_id         ID_NUM   #REQUIRED
service_id                  ID_NUM   #REQUIRED
>
```

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FIG. 5

COMMON CONTENT INFORMATION

```
<!ELEMENT CommonInfo (comp_info+)>
<!ELEMENT comp_info (comp_content+)>
<!ELEMENT comp_content EMPTY>
<!ATTLIST commonInfo
information_provider_id  ID_NUM    #REQUIRED
service_type             (0/1/2/3/4) #REQUIRED
element_service_id       ID_NUM    #REQUIRED
content_group_id         ID_NUM    #REQUIRED
storage_id               ID_NUM    #IMPLIED
major_version            PCDATA    #REQUIRED
minor_version            PCDATA    #REQUIRED
activation_time          DATE      #IMPLIED
expire_time              DATE      #REQUIRED
expire_policy            (0/1)     0
>
<!ATTLIST comp_info
ird_level                PCDATA    #REQUIRED
limit                    DATE      #REQUIRED
>
<!ATTLIST comp_content
element_content_id  ID_NUM  #REQUIRED
necessary           (ON/OFF) OFF
>
```

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FIG. 6

PRIVATE CONTENT INFORMATION

```
<!ELEMENT PrivateInfo (ird_level_list)* (filtering_pattern)*>
<!ELEMENT ird_level_list (ird_level_info)+>
<!ELEMENT ird_level_info EMPTY>
<!ATTLIST PrivateInfo
element_content_id      ID_NUM #REQUIRED
content_major_version   PCDATA  #REQUIRED
content_minor_version   PCDATA  #REQUIRED
first_bml_flag            (yes/no) no
activation_time         DATE    #IMPLIED
expire_time             DATE    #IMPLIED
expire_policy           (0/1) 0
data_type               (STREAM/FILE) #IMPLIED
content_size            CDATA   #IMPLIED
>
<!ATTLIST ird_level_info
ird_level               PCDATA  #REQUIRED
>
<!ATTLIST filtering_pattern
filter_type             (primary/secondary)     #REQUIRED
def_version             PCDATA  #REQUIRED
FieldID                 ID_NUM  #REQUIRED
info_version            PCDATA  #REQUIRED
pattern                 CDATA   #REQUIRED
>
```

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FIG. 7

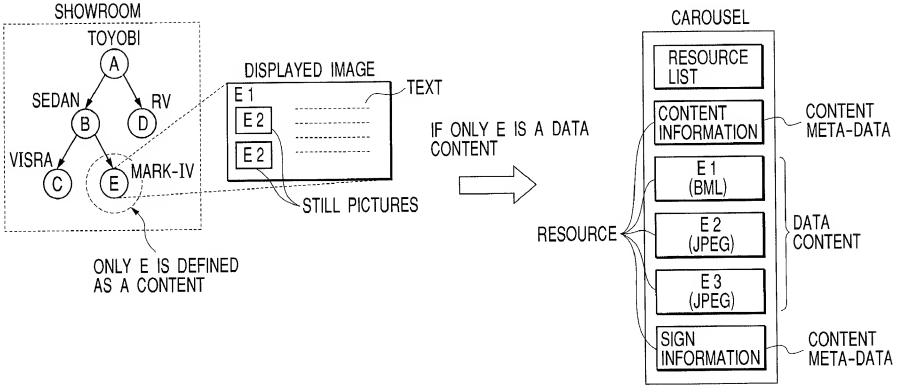

SHOWROOM
TOYOBI
A
SEDAN
RV
B
D
VISRA
MARK-IV
C
E
ONLY E IS DEFINED AS A CONTENT
DISPLAYED IMAGE
E 1
E 2
E 2
TEXT
STILL PICTURES
IF ONLY E IS A DATA CONTENT
CAROUSEL
RESOURCE LIST
CONTENT INFORMATION
CONTENT META-DATA
E 1 (BML)
E 2 (JPEG)
E 3 (JPEG)
DATA CONTENT
RESOURCE
SIGN INFORMATION
CONTENT META-DATA

FIG. 8

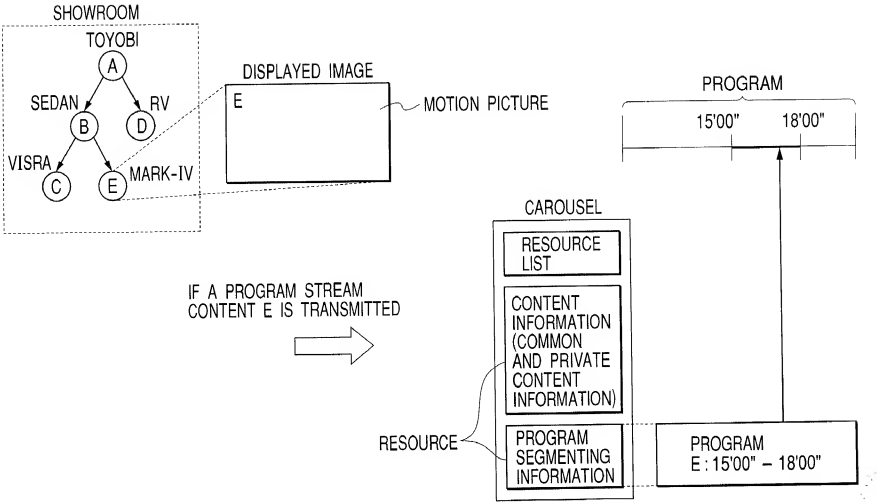

SHOWROOM
TOYOBI
A
SEDAN
RV
B
D
VISRA
MARK-IV
C
E
DISPLAYED IMAGE
E
MOTION PICTURE
PROGRAM
15'00"
18'00"
CAROUSEL
RESOURCE LIST
CONTENT INFORMATION (COMMON AND PRIVATE CONTENT INFORMATION)
PROGRAM SEGMENTING INFORMATION
RESOURCE
IF A PROGRAM STREAM CONTENT E IS TRANSMITTED
PROGRAM
E : 15'00" – 18'00"

FIG. 9

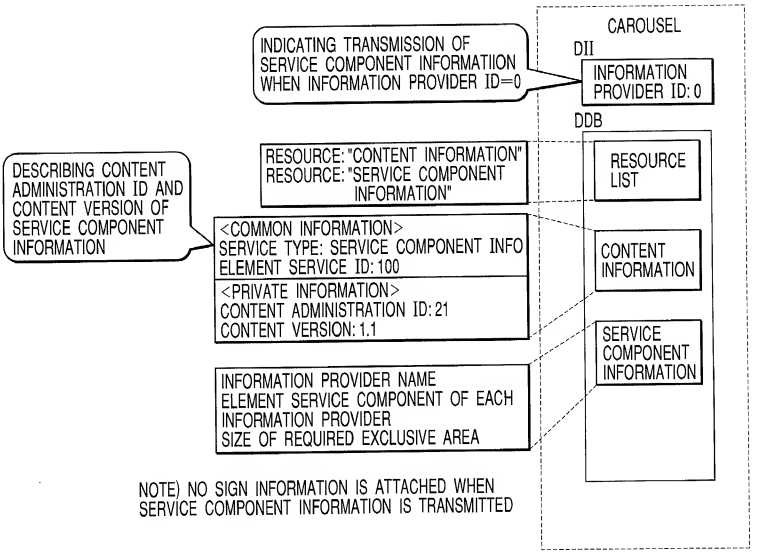

CAROUSEL
DII
INDICATING TRANSMISSION OF SERVICE COMPONENT INFORMATIION WHEN INFORMATION PROVIDER ID=0
INFORMATION PROVIDER ID: 0
DDB
RESOURCE: "CONTENT INFORMATION"
RESOURCE: "SERVICE COMPONENT INFORMATION"
RESOURCE LIST
DESCRIBING CONTENT ADMINISTRATION ID AND CONTENT VERSION OF SERVICE COMPONENT INFORMATION
<COMMON INFORMATION>
SERVICE TYPE: SERVICE COMPONENT INFO
ELEMENT SERVICE ID: 100
<PRIVATE INFORMATION>
CONTENT ADMINISTRATION ID: 21
CONTENT VERSION: 1.1
CONTENT INFORMATION
SERVICE COMPONENT INFORMATION
INFORMATION PROVIDER NAME
ELEMENT SERVICE COMPONENT OF EACH INFORMATION PROVIDER
SIZE OF REQUIRED EXCLUSIVE AREA
NOTE) NO SIGN INFORMATION IS ATTACHED WHEN SERVICE COMPONENT INFORMATION IS TRANSMITTED

FIG. 10

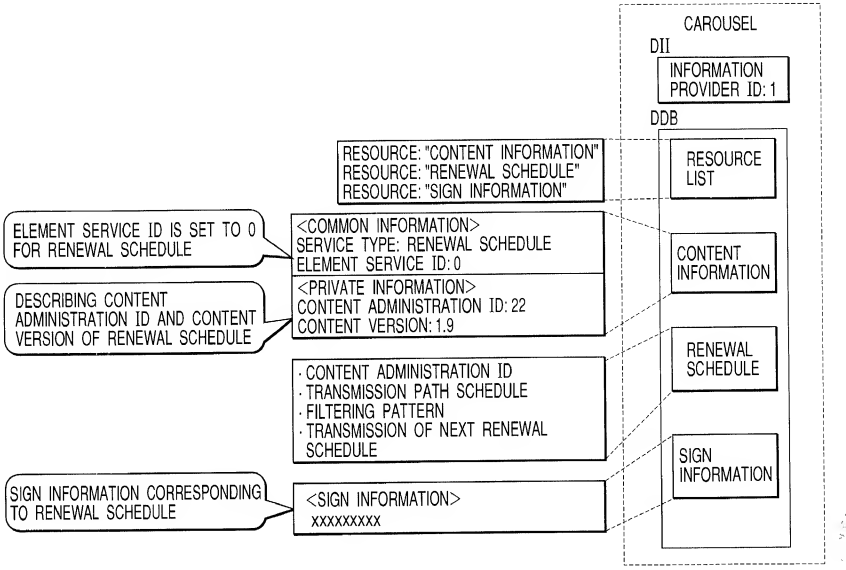

CAROUSEL
DII
INFORMATION PROVIDER ID: 1
DDB
RESOURCE LIST
RESOURCE: "CONTENT INFORMATION"
RESOURCE: "RENEWAL SCHEDULE"
RESOURCE: "SIGN INFORMATION"
ELEMENT SERVICE ID IS SET TO 0 FOR RENEWAL SCHEDULE
<COMMON INFORMATION>
SERVICE TYPE: RENEWAL SCHEDULE
ELEMENT SERVICE ID: 0
CONTENT INFORMATION
DESCRIBING CONTENT ADMINISTRATION ID AND CONTENT VERSION OF RENEWAL SCHEDULE
<PRIVATE INFORMATION>
CONTENT ADMINISTRATION ID: 22
CONTENT VERSION: 1.9
RENEWAL SCHEDULE
· CONTENT ADMINISTRATION ID
· TRANSMISSION PATH SCHEDULE
· FILTERING PATTERN
· TRANSMISSION OF NEXT RENEWAL SCHEDULE
SIGN INFORMATION
SIGN INFORMATION CORRESPONDING TO RENEWAL SCHEDULE
<SIGN INFORMATION>
xxxxxxxxx

FIG. 11A

FIG. 11B

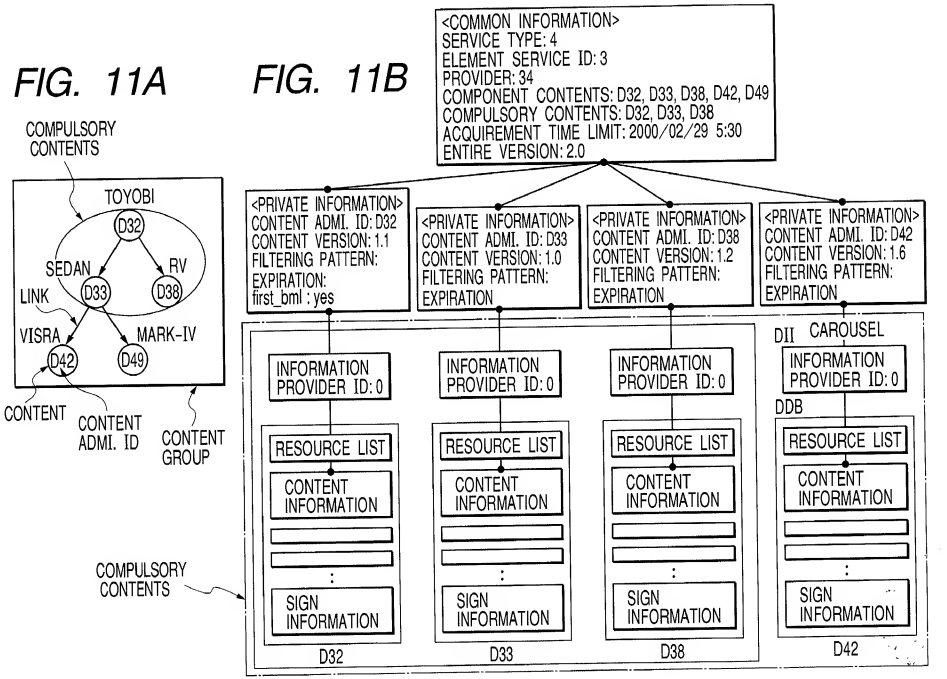


FIG. 12

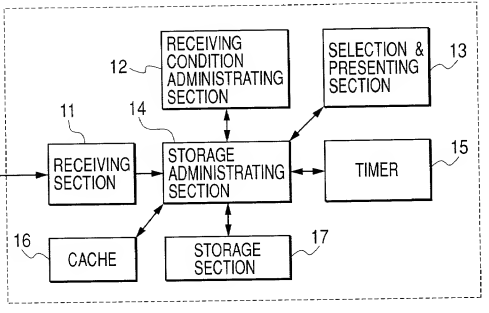

RECEIVING CONDITION ADMINISTRATING SECTION
12
SELECTION & PRESENTING SECTION
13
11
14
RECEIVING SECTION
STORAGE ADMINISTRATING SECTION
TIMER
15
16
CACHE
STORAGE SECTION
17

FIG. 13

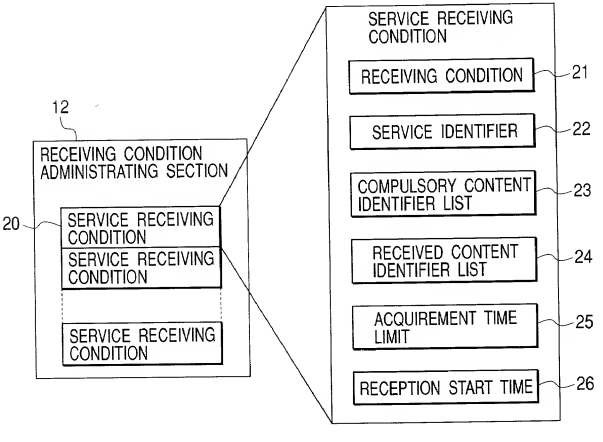

12
RECEIVING CONDITION ADMINISTRATING SECTION
20
SERVICE RECEIVING CONDITION
SERVICE RECEIVING CONDITION
SERVICE RECEIVING CONDITION
SERVICE RECEIVING CONDITION
RECEIVING CONDITION
21
SERVICE IDENTIFIER
22
COMPULSORY CONTENT IDENTIFIER LIST
23
RECEIVED CONTENT IDENTIFIER LIST
24
ACQUIREMENT TIME LIMIT
25
RECEPTION START TIME
26

FIG. 14A

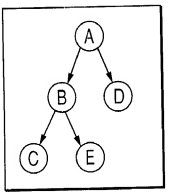


FIG. 14B

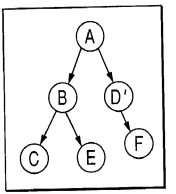


FIG. 14C

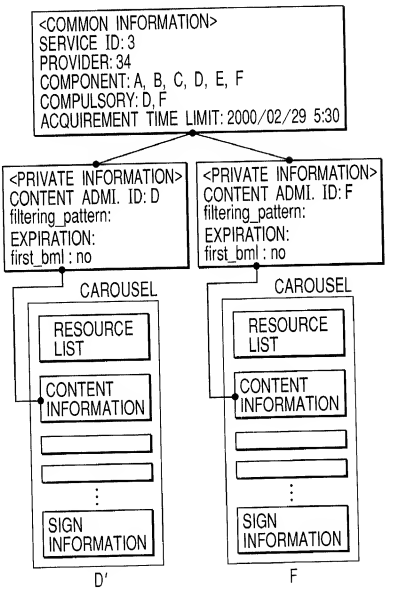
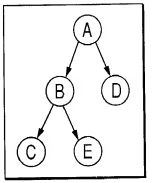


FIG. 15A FIG. 15B



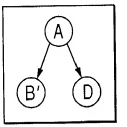


FIG. 15C

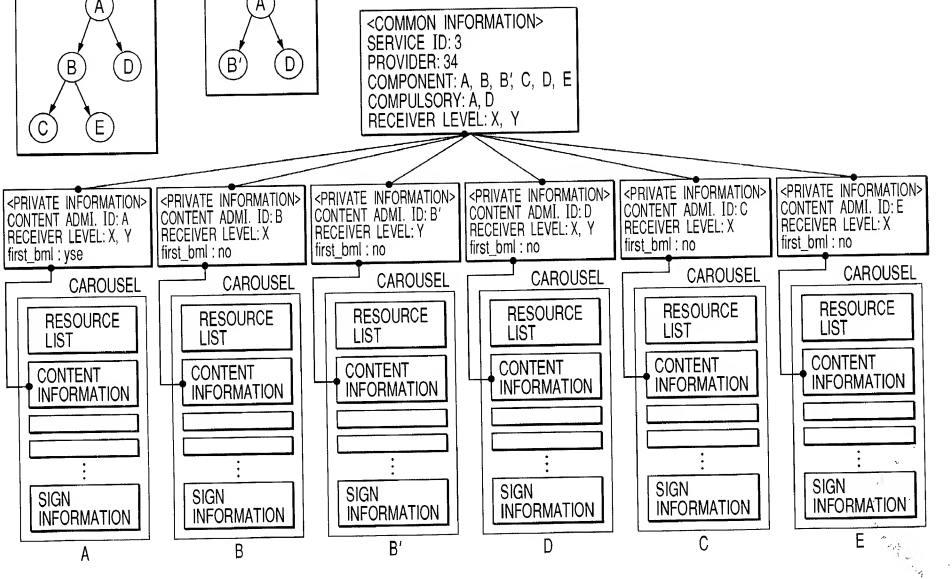


FIG. 16

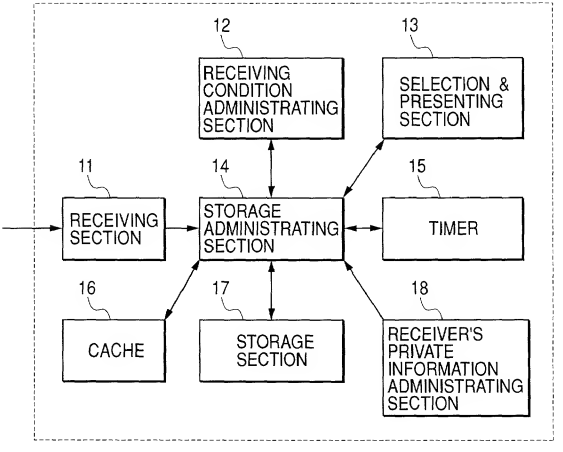

12
RECEIVING CONDITION ADMINISTRATING SECTION
13
SELECTION & PRESENTING SECTION
11
RECEIVING SECTION
14
STORAGE ADMINISTRATING SECTION
15
TIMER
16
CACHE
17
STORAGE SECTION
18
RECEIVER'S PRIVATE INFORMATION ADMINISTRATING SECTION

FIG. 17

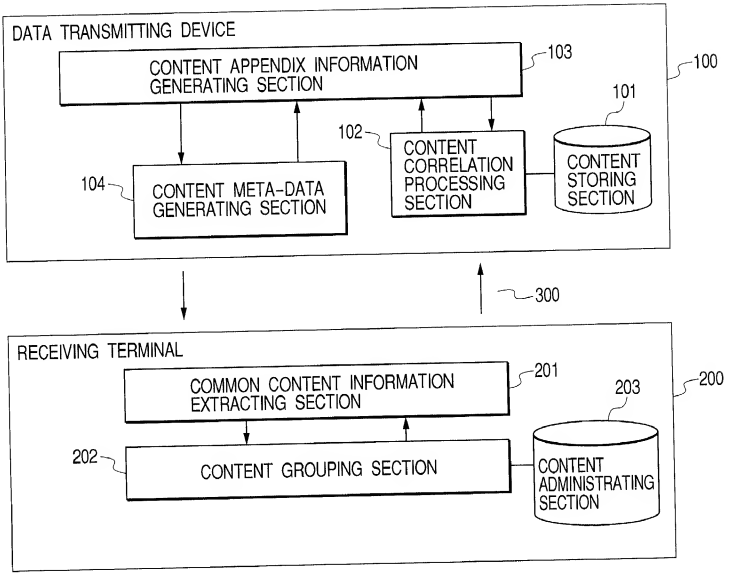

DATA TRANSMITTING DEVICE
CONTENT APPENDIX INFORMATION GENERATING SECTION
103
100
101
102
CONTENT CORRELATION PROCESSING SECTION
CONTENT STORING SECTION
104
CONTENT META-DATA GENERATING SECTION
300
RECEIVING TERMINAL
COMMON CONTENT INFORMATION EXTRACTING SECTION
201
203
200
202
CONTENT GROUPING SECTION
CONTENT ADMINISTRATING SECTION

FIG. 18A

DATA TRANSMITTING OPERATION

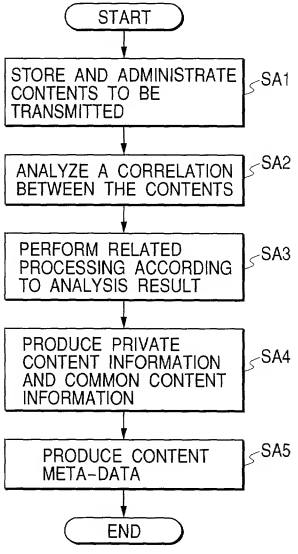


FIG. 18B

DATA RECEIVING OPERATION

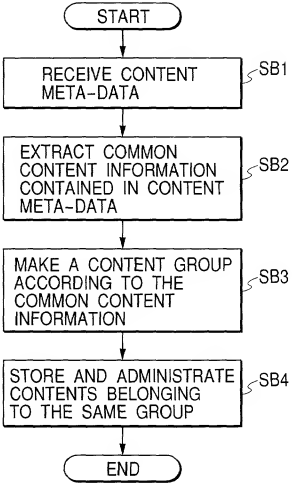


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FIG. 19

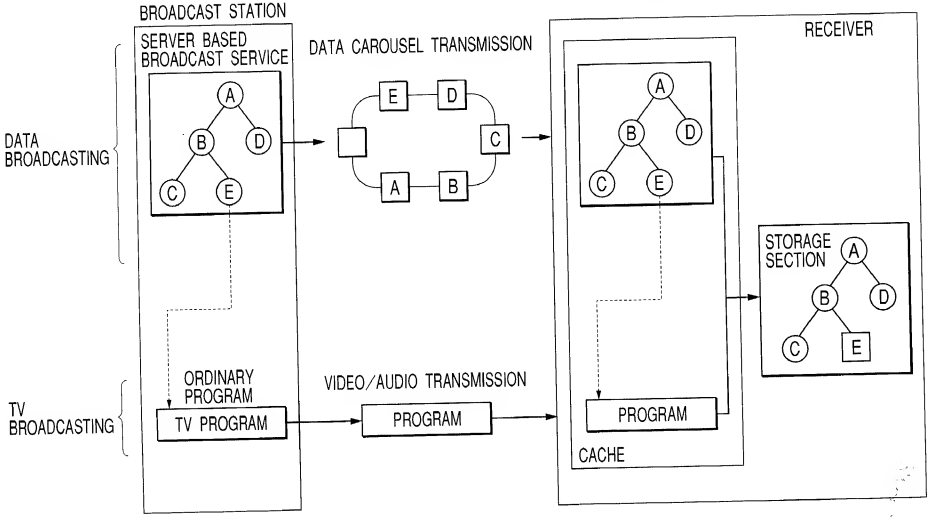

FIG. 20A

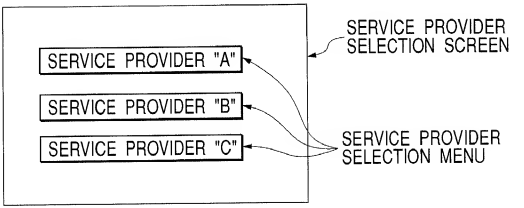
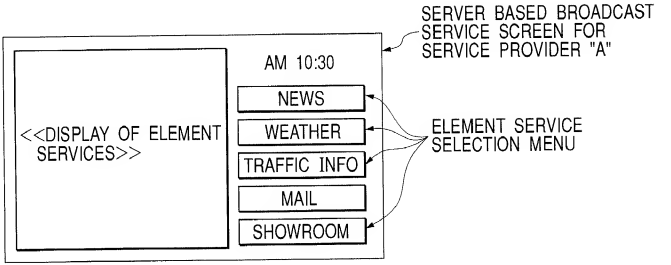
FIG. 20B